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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* GUNTER HALMSCHLAGER, FRANZ STELZHAMMER,  
ERICH BRUNNAUER, MANFRED GLOSER,  
MANFRED FEICHTINGER, THOMAS NAGLER,  
JOHANNES STIMPFL, JOSEF BACHLER,  
and CHRISTOPH MERCKENS

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Appeal 2010-009975  
Application 09/646,119  
Technology Center 1700

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Before CHUNG K. PAK, PETER F. KRATZ, and CATHERINE Q. TIMM,  
*Administrative Patent Judges.*

PAK, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's refusal to allow claims 46 through 97, all of the claims pending in the above-

identified application. An oral hearing was held on October 14, 2010. We have jurisdiction under 35 U.S.C. § 6<sup>1</sup>.

#### STATEMENT OF THE CASE

The subject matter on appeal<sup>2</sup> is directed to a multi-ply paper web forming machine or process involving the use of at least two formers for producing at least two fibrous web layers having a higher content of fines on one side of each layer and a couching zone for couching or joining the layers on the sides having a higher content of fines (e.g. claims 46 and 75).

According to page 1 of the Specification, as amended on January 22, 2001:

Different types of formers are known. For instance, in a fourdrinier former, the dewatering occurs at the wire side. A concentration of fines (otherwise referred to as fine particles or fine substances) at the upper side is achieved with power pulses. In a hybrid former, the main dewatering occurs at the wire side. In the zone of the upper wire, the dewatering occurs at the top which results in a reduction of the content of fines at the top. In a so-called roll blade gap former the dewatering occurs first at the top and then at the bottom, which results in a higher content of fines at the bottom.

Page 2 of the Specification, as amended on January 22, 2001, states that:

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<sup>1</sup> Although the action appealed from was a non-final rejection, we have jurisdiction pursuant to 35 U.S.C. §§ 6 and 134 since the claims have been twice presented and rejected. *See Ex parte Lemoine*, 46 USPQ2d 1420, 1423 (BPAI 1994).

<sup>2</sup> In previous Appeal No. 2006-0731(Application 09/646,119), this case was remanded to the Examiner so that the Examiner could identify the structures of the formers and couching zone taught by the prior art, which are capable of providing the claimed functions. Appellants were also ordered to identify any structural differences between the claimed and prior art machines resulting from the claimed functional limitations.

It is the aspect of the invention to create an improved process as well as an improved device of the above mentioned kind in which better layer adhesion is ensured in an economical and reliable fashion.

This aspect is obtained concerning the paper machine in that at least two layers, which are to be couched together and each have on one side a higher content of fines, are guided to the applicable couching zones in such a way that the sides having the higher content of fines come into contact with each other and in that at least one of the two layers was created by a gap former.

Details of the appealed subject matter are recited in representative claims 46, 53, 75, and 81<sup>3</sup> reproduced from the Claims Appendix to the Appeal Brief (“App. Br.”) filed June 27, 2007 as shown below:

46. A machine for the production of a multi-layered fibrous web, comprising:

at least two formers for forming at least two layers in which each layer has a higher content of fines on one side respectively; and

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<sup>3</sup> Appellants have presented substantive arguments directed to independent claims 46, 53, 75, and 81 in compliance with the requirements of 37 C.F.R. § 41.37(c)(1)(vii) (App. Br. 11-51). However, Appellants merely reiterate the limitations of the remaining dependent claims (App. Br. 51-56). The mere reiteration of claim limitations does not constitute substantive arguments within the meaning of 37 C.F.R. § 41.37(c)(1)(vii). See 37 C.F.R. § 41.37(c)(1)(vii) (“The contentions of appellant with respect to each ground of rejection presented for review in paragraph (c)(1)(vi) of this section, and the basis therefor, with citations of the statutes, regulations, authorities, and parts of the record relied on. . . .”). Therefore, for purposes of this appeal, we select claims 46, 53, 75, and 81 to decide the propriety of the Examiner’s §§ 102(b) and 103(a) rejections set forth in the Answer (“Ans.”) filed dated November 29, 2007.

a couching zone in which the at least two layers are couched together such that each layer's side having a higher content of fines contact each other;

wherein at least one of the at least two formers comprises at least one gap former.

53. A machine for the production of a multi-layered fibrous web, comprising:

at least two formers for forming at least two layers in which each layer has a higher content of fines on one side respectively;

a couching zone in which the at least two layers are couched together such that each layer's side having a higher content of fines contact each other, wherein at least one of the at least two formers comprises at least one gap former including two circulating continuous dewatering belts, convergently arranged to form a headbox nip, and in which said dewatering belts are guided in an area of said headbox nip over a forming element; and

a headbox arranged to supply a fibrous suspension to said headbox nip,

wherein said at least one gap former comprises a first gap former and a second gap former arranged to form at least two layers, wherein the higher content of fines side of said at least two layers occurs on a forming element side, and the web travel directions of said first and second gap formers are opposite each other, and

wherein a first layer created in said first gap former is guided together with at least one of said two dewatering belts around a deflection element, and then introduced via a

continuous belt, traveling in a generally opposite direction to a stream direction of said headbox, into said couching zone in which the first layer and a second layer formed by said second gap former are couched together so that their sides having a higher content of fines come into contact with each other.

75. A process for the production of a multi-layered fibrous web, comprising:

forming at least two layers via at least two formers, such that each layer has a side with a higher fines content;

couching together the at least two layers in a couching zone so that the sides with higher fines content contact each other;

wherein at least one of the at least two layers is formed by at least one gap former.

81. A process for the production of a multi-layered fibrous web, comprising:

forming at least two layers via at least two formers, such that each layer has a side with a higher fines content;

couching together the at least two layers in a couching zone so that the sides with higher fines content contact each other;

wherein at least one of the at least two layers is formed by at least one gap former comprising two circulating continuous dewatering belts that run together forming a headbox nip and which are guided in the area of the headbox nip, loaded with a fibrous suspension by a headbox, over a forming element,

wherein the at least one gap former comprises a first gap former and a second gap former arranged to form at least two layers, wherein the higher content of fines side of said at least two layers occurs on a forming element side, and the first and second gap formers are operated in opposite web travel directions, and

wherein a first layer formed in the first gap former is guided together with at least one of the two dewatering belts around a deflection element, and then via a continuous belt is introduced in a direction generally opposite to the travel direction of a first headbox into the couching zone in which the first layer and a second layer formed by the second gap former are couched together so that their sides having a higher content of fines come into contact with each other.

As evidence of unpatentability of the claimed subject matter, the Examiner relies on the following prior art references at pages 2 and 3 of the Answer:

Loynd	US 3,378,435	Apr. 16, 1968
Turner	US 4,830,709	May 16, 1989
Manning	US 5,238,534	Aug. 24, 1993
Wendt	GB 2 283 766 A	Sep. 17, 1995
Farrington Jr.	US 5,607,551	Mar. 4, 1997

Appellants request review of the following grounds of rejection set forth at pages 3 through 10 of the Answer<sup>4</sup>:

- 1) Claims 46, 47, and 74 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a) as obvious over the disclosure of Turner; and
- 2) Claims 48 through 97 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Turners, Loynd, Farrington Jr., Manning, and Wendt.

RELEVANT FACTUAL FINDINGS, PRINCIPLES OF LAW, ISSUES,  
ANALYSES, AND CONCLUSIONS

I. CLAIMS 46, 47, AND 74

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<sup>4</sup> We decline to consider US 4,614,566 issued to Koponen on September 30, 1986, DE 19704443 A1 issued to Gunter on August 13, 1998, and “Handbook for Pulp and Paper Technologist,” second edition, Gary A Smook, pp. 239-47 (unknown publication date) refer to by the Examiner at pages 3, 5, 6, and 10 of the Answer since they are not included in the statements of rejection. *See In re Hoch*, 428 F.2d 1341, 1342 n. 3 (CCPA 1970) (“Where a reference is relied on to support a rejection, whether or not in a ‘minor capacity,’ there would appear to be no excuse for not positively including the reference in the statement of the rejection.”).

Appellants do not question the Examiner's finding that Turner describes at least two formers and a couching zone for forming a multilayered fibrous composite. (*Compare Ans. 3-4 with App. Br. 11-51 and Reply Br. 1-6.*) Appellants also acknowledge at page 1 of the Specification that known formers, for example, are capable of providing the claimed function of producing a layer having a higher content of fines on one side thereof. In particular, Appellants acknowledge at page 1 of the Specification that:

Different types of formers are known. For instance, in a fourdrinier former, the dewatering occurs at the wire side. A concentration of fines (otherwise referred to as fine particles or fine substances) at the upper side is achieved with power pulses. In a hybrid former, the main dewatering occurs at the wire side. In the zone of the upper wire, the dewatering occurs at the top which results in a reduction of the content of fines at the top. In a so-called roll blade gap former the dewatering occurs first at the top and then at the bottom, which results in a higher content of fines at the bottom.

Although Appellants allege at page 5 of the Reply Brief that this passage does not indicate that its discussion of operation of the known formers is part of admitted prior art<sup>5</sup>, the fact remains that Appellants acknowledge that the known formers are capable of performing the claimed function. Nevertheless, Appellants still contend that Turner does not describe a

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<sup>5</sup> Although Appellants do not expressly acknowledge that their discussion of operation of the known formers in the Specification is admitted prior art, it is not clear from this record whether this disclosure of operation of known formers is known in the art since Appellants do not identify the source of this information. By focusing on the issue of whether or not the language in the passage constitutes an admission, Appellants have not answered the real question: Is this information prior art or not prior art?

machine or apparatus comprising at least two formers and couching zone capable of performing the claimed functions (App. Br. 11-51 and Reply Br. 1-6.)

Thus, the dispositive question raised by Appellants and the Examiner is: Does Turner describe an apparatus comprising at least two formers and couching zone capable of performing the claimed functions within the purview of 35 U.S.C. § 102(b)? On this record, we answer this question in the affirmative for the findings of fact set forth by the Examiner. We add the following primarily for emphasis and completeness.

As our reviewing court stated in *In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997):

A patent applicant is free to recite features of an apparatus either structurally or functionally. See *In re Swinehart*, 439 F.2d 210 (CCPA 1971) (“[T]here is nothing intrinsically wrong with [defining something by what it does rather than what it is] in drafting patent claims.”). Yet, choosing to define an element functionally, i.e., by what it does, carries with it a risk. As our predecessor court stated in *Swinehart*, 439 F.2d at 213:

where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.

This is so because the recitation of a new intended use for an old apparatus simply does not make a claim to that old apparatus patentable. Compare *Schreiber*, 128 F.3d at 1477. The patentability of an apparatus claim

depends on the claimed structure, not on the use or purpose of that structure, *Catalina Marketing Int'l., Inc. v. Coolsavings.com Inc.*, 289 F.3d 801, 809 (Fed. Cir. 2002), or the function or result of that structure. *In re Danly*, 263 F.2d 844, 848 (CCPA 1959); *In re Gardiner*, 171 F.2d 313, 315-16 (CCPA 1948).

Here, as correctly found by the Examiner at pages 3-5 of the Answer, Turner, like Appellants, illustrates a multi-layered fibrous web forming apparatus comprising a gap former having forming wires 12 and 14, guide rolls 16 and 17, a forming shoe 22, and dewatering shoes 26 and 32 for producing a top fibrous ply (WT) dewatered at both the bottom and top surfaces, a headbox 20 for supplying a slurry containing water and wood pulp fibers to the gap former, a Fourdrinier former for producing a base fibrous ply (WB) with its top surface exposed to the air side, a headbox 18 for supplying a slurry of water and wood pulp fibers to the Fourdrinier former, and a couching zone formed by a lead-in roll 19 of the gap former and the forming line 10 of the Fourdrinier former for joining the base and top fibrous plies on their top sides to produce the multi-layered fibrous web (WC). (*Compare* Turner, Fig. 1 and cols. 3-5 *with* Appellants' claim 46 and Appellants' Fig. 3 and Spec. 6, and 9-10.) The Fourdrinier former taught by Turner, like the one illustrated in Appellants' Figure 3, permits the top surface of its base fibrous ply to be exposed to the air side, which according to page 9 of the Specification, necessarily produces a higher fine content on the top surface thereof. (*See also* Ans. 4.) Likewise, the gap former taught by Turner subjecting its top fibrous ply to dewatering at the bottom and then at the top surface necessarily produces a top fibrous ply having a higher fine content on its top surface since according to page 1 of the Specification, a

gap former subjecting its fibrous web to two dewatering steps, removing water from top and bottom surfaces, causes a higher fine content on the surface last dewatered. (See Ans. 4, footnote 1.) Finally, Turner, like Appellants, also teaches the importance of having higher fine contents on the sides of the layers to be bonded to improve the bonding. In particular, Turner teaches (col. 2, ll. 12-18) that:

[B]y dewatering through both surfaces of both the top and base plies, formation of the individual plies is accomplished faster and, equally important, the ply faces which come into ply bonding engagement are better prepared, by virtue of having more fines and less filler at their surface, to remain permanently bonded together.

Given these teachings, we concur with the Examiner that there is a reasonable basis to believe that the formers and couching zone of the multi-layered fibrous web forming apparatus taught by Turner are capable of performing the claimed functions, i.e., formers for producing at least two individual fibrous webs with each having a higher fine contends on its top side thereof and a couching zone for joining at least two fibrous layers on their higher fine content sides (top sides).

Appellants contend that Tuner's apparatus is incapable of forming the claimed functions. In support of this contention, Appellants refer to column 1, lines 52-66 of Turner, which describes dewatering a top fibrous ply so as to provide *a more uniform or nearly the same distribution* of fines, filler and fibers on both the top and bottom sides of the top fibrous ply. However, Appellants' reference to this passage of Turner does not show that the apparatus taught by Turner does not possess the claimed functions or does not have structures capable of performing the claimed functions. Contrary

to Appellants' contention, Turner's disclosure of a more uniform or nearly the same distribution of fines on both the sides of the top fibrous ply indicates that the fine contents on the both top and bottom sides of the top fibrous ply are not the same. Appellants' own claims also do not preclude nearly the same distribution of fines on both top and bottom sides of a top fibrous ply so long as one side of the top fibrous ply has at least little or insignificantly more fines than the other side. As indicated *supra*, Turner, like Appellants, recognizes that higher the fine content on the sides of the fibrous plies to be bonded, the better the bonding result.

It is apparent from the record that Appellants were given a sufficient opportunity to identify any structural features required by the claimed functional limitations, which can distinguish the claimed machine over the prior art apparatus. Appellants, however, refuse to identify any structural difference between the claimed and prior machines even though they are in the best position to identify such difference. It is important to note that language in an apparatus claim directed to the function, operation, intent-of-use, and materials upon which these apparatus components work, that does not structurally limit the claimed apparatus components or patentably differentiate the claimed apparatus from an otherwise identical prior art apparatus, will not support patentability. *See, e.g., In re Rishoi*, 197 F.2d 342, 344-45 (CCPA 1952); *In re Otto*, 312 F.2d 937, 940 (CCPA 1963); *In re Ludtke*, 441 F.2d 660, 663-64 (CCPA 1971); *In re Yanush*, 477 F.2d 958, 959 (CCPA 1973).

Accordingly, for the reasons set forth in the Answer and above, we affirm the Examiner's decision rejecting claims 46, 47, and 74 under 35

U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a) as obvious over the disclosure of Turner.

## II. CLAIMS 48 THROUGH 97

Appellants do not challenge the Examiner's finding that Turner teaches at least first and second gap formers having at least two circulating continuous dewatering belts arranged to form a headbox nip over a forming element, with their web travel directions being opposite each other, a headbox arranged to supply a fibrous suspension to the head box nip, and a couching zone for forming a multilayered fibrous composite. (*Compare Ans. 3-8 with App. Br. 11-51 and Reply Br. 1-6.*) Nor do Appellants challenge the Examiner's finding that the crescent formers taught by Loynd, Farrington Jr., Manning, and Wendt are gap formers and are known to provide equivalent functions as twin wire/gap formers. (*Compare Ans. 6 and 7 with App. Br. 11-51 and Reply Br. 1-6.*) Thus, we concur with the Examiner that it would have been obvious to employ the known gap formers, such crescent formers and/or twin wire/gap formers, as the gap formers of the apparatus and process taught by Turner, with a reasonable expectation of successfully producing a multi-layered composite fibrous web having a desired number of layers corresponding to the number of the known gap formers and the Fourdrinier former used.

Thus, the dispositive question advanced by the Examiner and Appellants is: Does Turner teach, or would Turner have suggested, forming at least two layers with at least two formers such that each layer has a side with a higher fines content and couching the layers in a couching zone so that the sides with the higher fines content contact each other as required by

apparatus claim 53 and process claims 75 and 81? On this record, we answer this question in the affirmative for the reasons well articulated by the Examiner at pages 3-9 of the Answer. We add the following for emphasis and completeness.

As indicated *supra*, the Examiner has supplied a sufficient factual basis to show that Turner's formers and couching zone are at least capable of performing the claimed functions, i.e., forming at least two layers such that each layer has a side with a higher fines content and couching the layers so that the sides with the higher fines content contact each other. More importantly, however, Turner's disclosure of forming a top fibrous ply having nearly the same fine contents on the top and bottom surfaces thereof, with its disclosure of improving the bonding via providing high fines contents on the sides of the top and base fibrous plies to be bonded would have prompted one of ordinary skill in the art to employ appropriate dewatering conditions in the apparatus and process taught by Turner to produce top and base fibrous plies having at least a little more or higher fines contents on the top surfaces thereof (the sides to be bonded in the couching zone), with a reasonable expectation of successfully producing a multi-layered fibrous web with improved bonding. We again note that the claims on appeal do not preclude nearly the same distribution of fines on both top and bottom sides of a top fibrous plies so long as the sides of the top and bottom fibrous plies to be joined or couched have at least little or insignificantly more fines than the other sides. As our reviewing court stated in *In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003):

We have also held that a *prima facie* case of obviousness exists when the claimed [fines content] range and the prior art [fines content] range do not overlap but are close enough such that

one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 783 (Fed. Cir. 1985).

Accordingly, for the reasons set forth in the Answer and above, we affirm the Examiner's decision rejecting claims 48 through 97 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Turners, Loynd, Farrington Jr., Manning, and Wendt.

ORDER

In view of the foregoing, it is

ORDERED that the decision of the Examiner to reject claims 46, 47, and 74 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a) as obvious over the disclosure of Turner is AFFIRMED;

FURTHER ORDERED that the decision of the Examiner to reject claims 48 through 97 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Turners, Loynd, Farrington Jr., Manning, and Wendt is AFFIRMED; and,

FURTHER ORDERED that no time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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Appeal 2010-009975  
Application 09/646,119

GREENBLUM & BERNSTEIN, P.L.C.  
1950 ROLAND CLARKE PLACE  
RESTON VA 20191